

REMARKS

Claims 1-20 are pending. Applicants respectfully request reconsideration and reexamination of the pending claims.

Applicants gratefully acknowledge the observation noted by the Examiner that "the optimization of both the index of refraction and the thickness seems to yield particularly advantageous results [such that the applicant] may wish to include these limitations in the claims." In that regard, claim 1 has been amended to reflect the enhanced contrast nature of embodiments of the invention. For example, consider Figure 6b, which illustrates how the thickness and index of refraction for the SiON layer may be varied to enhance the optical contrast between the amorphous and crystalline states of the underlying phase-change layer. Indeed, Applicants note on page 13 of the specification that a thickness of 60nm and an index of refraction of 1.7 maximizes CNR for a particular underlying phase change layer.

Accordingly, Applicants have support for the added limitation to claim 1 of "wherein a thickness of the first silicon oxynitride layer and an index of refraction of the first silicon oxynitride layer are selected to enhance an optical contrast between an amorphous state of the first metal/alloy layer and a crystalline state of the first metal/alloy layer."

With respect to claim 1, Applicants readily admit that a phase-change layers made of "tin, antimony and an element selected from the group consisting of indium, germanium, aluminum, and zinc" as recited in claim 1, for example, were known in the optical disk arts. Moreover, the use of silicon oxynitride as a protective layer was also known in the optical disk arts. However, this use of silicon oxynitride as a protective layer served to prevent oxidation of underlying data layers. A phase-change layer made of "tin, antimony and an element selected from the group consisting of indium, germanium, aluminum, and zinc" does not need protection from oxidation. Instead, Applicants have discovered that a layer of

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silicon oxynitride enhances the contrast (as suggested by the title of the present application) of such a phase-change layer.

The claim rejections will now be addressed directly. Consider, for example, claim 1, which has been rejected over a number of Kodak references (USPs 4960680, 4774170, 4812386, and 4798785) that disclose the use of the claimed phase change layer that is comprised of "tin, antimony and an element selected from the group consisting of indium, germanium, aluminum, and zinc." However, nowhere in these references is a teaching or suggestion regarding the contrast enhancement recited in claim 1.

In particular, nowhere in the remaining cited prior art (EP 0945860, JP 03-086943, Phillips '360, Uno '690, Zhou '822, Handa '507, and Kawakubo '459 is there a teaching of using silicon oxynitride to cover a phase change layer, let alone the optimization of CNR for the phase change layer by selecting an appropriate thickness and index of refraction for the silicon oxynitride. Accordingly, claim 1 and its dependent claims are allowable over the cited prior art.

Claim 13 and its dependent claims are allowable over the cited prior art for analogous reasons.

CONCLUSION

For the above reasons, pending Claims 1-20 are in condition for allowance and allowance of the application is hereby solicited. If the Examiner has any questions or concerns, a telephone call to the undersigned at (949) 752-7040 is welcomed and encouraged.

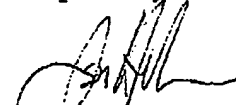
I hereby certify that this correspondence is facsimile transmitted to the Commissioner for Patents, Alexandria, VA 22313-1450, at 571-273-8300, on February 17, 2006.


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Date of Signature

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